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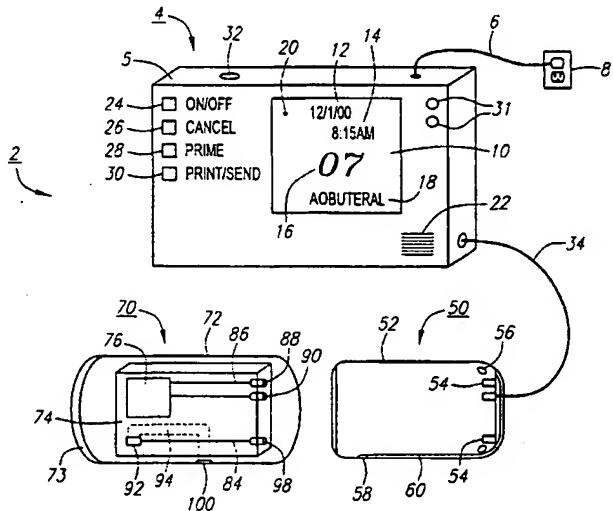
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For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

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(54) Title: PULMONARY DRUG DELIVERY DEVICE



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(57) Abstract: A nebulizer (2) for delivering a drug to a patient includes an electronic control unit (4); a hand piece (50) connected to the electronic control unit via a cable (34), and a cartridge (70) detachably engaged with the hand piece. The electronic control unit includes a controller, a cartridge reader, a dosage storage element, and a display (10). The display preferably displays the drug name (18) and the number of dosages remaining (16) in the cartridge. The cartridge includes a head or nebulizer element (100) for creating a fine mist or cloud of the drug in droplet form. The cartridge also includes a storage container (74) containing a drug and a pump (92) for pumping the drug to the nebulizer element. The cartridge also contains an information storage element (76) for containing information regarding the drug and the drug delivery protocol for the patient. The information in the information storage element is transmitted to the electronic control unit when the cartridge is engaged with the hand piece.

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INTERNATIONAL SEARCH REPORT

International application No.
PCT/US01/25886

A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) :A61M 11/00, 15/00, 16/00, 16/10; A62B 7/00; F16K 31/02
US CL :128/200.14, 200.16, 200.22, 203.12, 204.21, 204.23

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 128/200.14, 200.16, 200.22, 203.12, 204.21, 204.23

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

NONE

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 5,363,842 A (MISHELEVICH ET AL.) 15 NOVEMBER 1994, SEE COL.6, LINES 30-45, 62-64.	1,5,6,8-18,20-24,27
Y	US 5,404,871 A (GOODMAN ET AL.) 11 APRIL 1995, SEE COL.16, LINES 4-23.	1,5,6,8-18,20-24,25,26,27,28-30
Y	US 4,984,158 A (HILLSMAN) 08 JANUARY 1991, SEE FIG.1.	1,5,6,8-18,20-24
Y	US 5,950,619 A (VAN DER LINDEN ET AL.) 14 SEPTEMBER 1999, SEE COL.3, LINES 10-25.	1,5,6,8-18,20-24,25,26,27,28-30

 Further documents are listed in the continuation of Box C. See patent family annex.

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C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 5,392,768 A (JOHANSSON ET AL.) 28 FEBRUARY 1995, SEE COL. 25, LINES 36-48.	2-4,7,19
X		31